TITLE OF THE INVENTION

CONTENT DISTRIBUTION MANAGEMENT SYSTEM AND CONTENT DISTRIBUTION MANAGEMENT METHOD

BACKGROUND OF THE INVENTION

(1) Field of the Invention

The present invention relates to a content distribution management system, and especially relates to a content distribution management system for managing copyrights and payments in connection with a content circulation.

(2) Description of the Prior Art

As a conventional method of downloading a desired content over a network such as the Internet or the like, a user requests a search server over the network to search contents using key words or the like. Further a user specifies a more desirable content among the searched ones, requests the distributor of the content to distribute it, and acquires it. Also, a user exchanges a file directly with another user or copies it by way of file exchange software, not through a server of a content provider, whether legitimately or otherwise.

Also, as seen in the U.S. Patent No. 5,794,207 "Method and apparatus for a cryptographically assisted commercial network system designed to facilitate buyer-driven conditional purchase offers" owned by Walker Asset Management Limited Partnership (so-called the "Priceline patent"), there is a computer transaction system by a reverse auction in which a buyer offers a conditional purchase including a proposed price, inputs his/her credit card information into a computer, and selects the most appropriate seller among potential sellers whom an intermediary invited.

However, the conventional file exchange system such as

"NapSter" or "Gnutella" provides no protection of content copyrights, that is, no payment processing. Therefore, there may be the case where a content is distributed free of charge, contrary to the copyright owner's intention.

SUMMARY OF THE INVENTION

Accordingly, the present invention is available to solve the above-mentioned problems, aiming at providing a system for distributing a content efficiently, as well as avoiding copyright infringements caused by an illegitimate file exchange, and managing the copyrights (or usage rules) of the content and payment processing. In other words, the present invention aims at preventing copyright infringements caused by an illegitimate file exchange or the like by building a system for performing copyright management concerning a content usage and payment management accompanying a content usage independently of distribution of an encrypted content. Also, it aims at making sure of preventing the copyright infringements of a content by performing the above-mentioned copyright management and payment management even when a part of usage rights of a purchased content is further sold to others, or a content which an intermediary distributed only is purchased.

In order to achieve the above-mentioned object, the content distribution management system according to the present invention is a content distribution management system that circulates a content via a network, including a plurality of communication terminal devices that can exchange a content on a network, and a distribution management device that performs copyright management of a content and payment management concerning usage of the content, wherein the communication terminal device includes a content receiving unit operable to receive a content from another communication terminal device, a purchase requesting unit

operable to send purchase requesting information for requesting purchase of the received content to the distribution management device, and a right information receiving unit operable to receive, from the distribution management device, right information for enabling usage of the content which is requested to be purchased under a certain rule, and the distribution management device includes a memory unit operable to memorize information regarding the copyright management and information regarding the payment management by relating the information with individual content, a right information sending unit operable to specify right information according to the information regarding the copyright management that is specified based on the purchase requesting information received from the communication terminal device, and send the specified right information to a predetermined communication terminal device, and a payment management processing unit operable to update the information regarding the copyright management and the information regarding the payment management based on the purchase requesting information.

Therefore, since the distribution management device exclusively performs copyright management concerning usage of a content and payment management concerning purchase of a content based on right information and purchase requesting information, separately from distribution of the content, copyright infringements caused by an illegitimate file exchange or the like can be prevented.

Also, the content distribution management system according to the present invention further includes a communication exchange device that provides information regarding the circulation of the content to the communication terminal device, wherein the communication terminal device further includes a search requesting unit operable to send information regarding a search to the communication exchange device, receive result information

regarding a predetermined search from the communication exchange device, and specify a content and a distributor of the content based on the received result information, and a distribution requesting unit operable to send, to the specified distributor, sending requesting information for requesting sending of the specified content, and the communication exchange device includes a search responding unit operable to receive information regarding a search from the communication terminal device, make a result information regarding the search based on the received information, and send the result information to the communication terminal device that is a sender of the information regarding the search.

Therefore, since a user of the communication terminal device can obtain a search result corresponding to information regarding the search from the communication exchange device, the user can specify a content which meets his/her demands and a distributor of the content by using the information regarding the search.

Also, the communication terminal device according to the present invention includes a redistributing unit operable to send the content received by the content receiving unit to another communication terminal device.

Therefore, since a user of the communication terminal device can freely redistribute the received content to a user of another communication terminal device, the content can be circulated prevailingly.

Also, in the communication terminal device according to the present invention, the distribution requesting unit specifies the communication terminal device itself that makes the request or another communication terminal device as a destination of the specified content, and sends the sending requesting information to the specified device.

Therefore, since a content can be distributed to anyone different from a purchaser of the content, the content can be

distributed as a gift.

Also, in the communication terminal device according to the present invention, the search requesting unit sends a search condition to the communication exchange device, receives a predetermined search list from the communication exchange device, and specifies a content and a distributor of the content based on attribute information indicating a characteristic of the content that is attached to the received search list.

Here, in the communication terminal device according to the present invention, the search requesting unit may further weight the attribute information, compares contents based on the attribute information, and specifies a most weighted content and a distributor of the content.

Further, a content and a distributor of the content may be specified based on attribute information such as a data size of the content and a time required for distribution of the content, or an image format or a data compression method of the content.

Therefore, since a user of the communication terminal device can compare contents by weighting the attribute information, the user can specify a content that meets his/her demands more closely and a distributor of the content.

Also, in the distribution management device according to the present invention, the payment management processing unit may further make a history of information regarding the purchase of the content, and perform payment processing for allocating a charge based on the information of the history.

Also, in the distribution management device according to the present invention, the memory unit may further memorize information indicating a communication terminal device corresponding to information indicating an intermediary, and the payment management processing unit may further distinguish whether the information indicating an intermediary is added or not

to the purchase requesting information that is received from the communication terminal device, and when the information is added, further perform payment processing concerning an intermediary fee allocation for the communication terminal device that is equivalent to the intermediary.

Also, in the distribution management device according to the present invention, the payment management processing unit, when the information regarding the copyright management is updated according to purchase of a content, may further perform payment processing concerning collection of a management fee for the management for at least one of the communication terminal device that provides the content corresponding to the update, the communication terminal device that intermediates the content and the communication terminal device that purchases the content.

Therefore, since the distribution device can keep track of a purchase of a content according to the purchase history of the content, allocate an intermediary fee to an intermediary involved in the purchase of the content, and collect a management fee for the management of the purchase of the content, more careful payment processing can be realized.

Also, the distribution management device according to the present invention may further include an advertising information storage unit operable to receive advertising information from one of the communication terminal devices, and store the advertising information and information indicating the communication terminal device by relating the information with each other, wherein the right information sending unit further reads out advertising information corresponding to the one communication terminal device from the advertising information storage unit, when the purchase requesting or usage requesting information of the content is received from the other communication terminal device, and sends the advertising information as well as the right information to the other

communication terminal device, and the payment management processing unit further performs payment processing concerning collection of an advertising rate for the one communication terminal device.

Therefore, the communication terminal device can place an advertisement, and the distribution management device can collect an advertising rate from the communication terminal device that placed the advertisement.

Note that, in order to achieve the above-mentioned object, the present invention can be realized as a content distribution management method including characteristic units of the above content distribution management system as steps, as a content usage method and a distribution management method including characteristic units of the above communication terminal device and the above distribution management device as steps, or as a program including each of these steps. And the program can not only be stored on a ROM or the like of the communication terminal device or the distribution management device, but also be circulated via a transmission medium such as a recording medium like a CD-ROM or the like and a communication network.

BRIEF DESCRIPTION OF THE DRAWINGS

These and other objects, advantages and features of the invention will become apparent from the following description thereof taken in conjunction with the accompanying drawings that illustrate a specific embodiment of the invention. In the Drawings:

Fig. 1 is a diagram showing a relationship between a broadcasting station and a TV receiver in a configuration example of a content distribution management system, in which how communication is performed in a primary circulation of a content is illustrated.

Fig. 2 is a block diagram showing a functional configuration of

each device as shown in Fig. 1.

Fig. 3 is a detailed functional block diagram of a content storage processing unit of a content distributing device A as shown in Fig. 2.

Fig. 4 is a diagram of a communication sequence between each device in the case of a primary circulation of a content.

Fig. 5 is a diagram showing a detailed example of information which is communicated between each device with a content distribution management device as a center in connection with a primary circulation of a content.

Fig. 6A is an example of a table in use for managing copyrights and payment (before purchase of a content).

Fig. 6B is an example of a table in use for managing copyrights and payments (after purchase of a content).

Fig. 6C is an example of a table in use for managing copyrights and payments (after usage of 4 rights of a content).

Fig. 7 is a block diagram showing a functional configuration of each device in a content distribution management system according to the second embodiment, in which how communication is performed between each device in a secondary circulation of a content is illustrated.

Fig. 8 is a diagram of a communication sequence in the case where a purchased content and a non-purchased content are in a secondary circulation.

Fig. 9 is a diagram showing a detailed example of information which is communicated between each device with a content distribution management device as a center in the case where a content distributing device A secondarily circulates a content purchased from a content providing device further to a content distributing device B.

Fig. 10A is an example showing how details of a management information table managed in a content distribution management

device change in the case where a content is purchased in a primary circulation and further circulated secondarily (before purchase of a content).

Fig. 10B is an example showing how details of a management information table managed in a content distribution management device change in the case where a content is purchased in a primary circulation and further circulated secondarily (after purchase of a content).

Fig. 10C is an example showing how details of a management information table managed in a content distribution management device change in the case where a content is purchased in a primary circulation and further circulated secondarily (in the case where 4 rights of a content are used and then the remaining 3 rights are offered for sale).

Fig. 10D is an example showing how details of a management information table managed in a content distribution management device change in the case where a content is purchased in a primary circulation and further circulated secondarily (after purchase of a content in a secondary circulation).

Fig. 11 is an example of a table showing a circulation history of a content.

Fig. 12 is an example of how communication is specifically performed in a content distribution management device 17 in the case where a non-purchased content that was distributed in a primary circulation is secondarily circulated.

Fig. 13A is an example showing how details of a management information table managed in a content distribution management device change in the case where a non-purchased content is secondarily circulated (before purchase of a content).

Fig. 13B is an example showing how details of a management information table managed in a content distribution management device change in the case where a non-purchased content is

secondarily circulated (after purchase of a content).

Fig. 14 shows lists of data regarding intermediaries registered corresponding to IDs of devices such as a content providing device and a content distributing device.

Fig. 15 is a flowchart showing a flow of allocation processing among payment processing in a content distribution management device.

DESCRIPTION OF THE PREFERRED EMBODIMENT(S)

The following is an explanation of the embodiments for the present invention with reference to figures.

(The First Embodiment)

Fig. 1 is a diagram showing a relationship between a broadcasting station 100 and a TV receiver 200 in a configuration example of a content distribution management system 10 of the present embodiment, in which how communication is performed in a primary circulation of a content is illustrated.

More specifically, the broadcasting station 100 is a BS/CS digital broadcasting station or the like having a content providing device 1, content exchanging devices 15, 16 and a content distribution management device 17. The TV receiver 200 is a content distributing devices A 11, B 13 or the like. Also, there may be the case where the content providing device 1 corresponds to the broadcasting station 100 on the Internet and the content distributing device A 11or B 13 corresponds to a personal computer, an STB (a set-top box) or the like at home.

Here, "a primary circulation" means a delivery of a content by a user who is entitled to delivery rights of the content (an original creator, most typically). In this primary circulation, there are two cases where a recipient of the delivery purchases the content, or receives only the distribution of the content without purchasing it.

Further, "a secondary circulation" means a re-delivery of the content that was circulated primarily. Here, re-delivery of the content that was purchased in the primary circulation is referred to as "resale", and re-delivery of the content that was not purchased but distributed in the primary circulation is referred to as "intermediation".

Primary circulation of a content will be outlined with reference to Fig. 1.

First, the content providing device 1 registers usage rules and others of a distributable content on the content distribution management device 17. Further, the content providing device 1 registers a list describing information of the distributable content on the content exchanging device 15.

The content distribution device A 11 requests the content exchanging device 15 to search for desired contents and receives supply of a content list from the content exchanging device 15. The content distributing device A 11 thereby specifies the content providing device 1 and a content based on the content list, requests the content providing device 1 to distribute the specified content, and receives distribution of the content. At this time, the content providing device 1 may notify the content distribution management device 17 that the content providing device 1 has distributed the content to the content distributing device A 11.

Further, the content distributing device A 11 requests the content distribution management device 17 to purchase the distributed content in order to purchase it, and receives distribution of usage rules, an encryption key and copyright information such as payment information to enable its use. Here, in requesting to purchase a content, an address of a content providing device as a distributor, an address of a device to be distributed to as a destination (the content distributing device A 11 in this case), content ID and others are specified.

After that, the content distribution management device 17 notifies the content providing device 1 that a payment was allocated because of the purchase of the content entitled to the content providing device 1.

Note that a network in this case includes a broadcasting network or a communication network.

Fig. 2 is a block diagram showing a functional configuration of each device as shown in Fig. 1.

The content providing device 1 includes a content storage processing unit 5 for managing storage and distribution of a content such as audio/video or data, a user interface unit 3 for communicating usage of a content (e.g., control of viewing a content and transferring/copying a content. Same meaning as above thereafter.) and information thereof, and a sending/receiving unit 7 for sending and receiving a content or the like to and from other devices via a network 19. Note that, although the content providing device 1 actually requires, in addition to the above, various components for realizing a security protection function, a format conversion function, an encryption/decryption function, and a digital broadcasting sending/receiving function or a communication function, they are omitted because they are not the main features of the present invention.

The content distributing device A 11 includes a content storage processing unit 115 for managing storage and usage of a content such as audio/video or data, a user interface unit 111 for communicating usage and information of a content, a content acquisition processing unit 113 for acquiring and purchasing the most appropriate content based on copyright-related information (such as usage rules and others), and a sending/receiving unit 117 for sending and receiving a content or the like to and from other devices via the network 19. Note that, although the content distributing device A 11 actually requires, in addition to the above,

various components for realizing a security protection function, a format conversion function, an encryption/decryption function, and a digital broadcasting sending/receiving function or a communication function, they are omitted because they are not the main features of the present invention.

The content exchanging device 15 includes a content exchange processing unit 153 for searching contents requested by the content distributing device A 11 and providing a list of them, and a sending/receiving unit 157 for sending and receiving a content or the like to and from other devices via a broadcast wave (such as a BS wave or a ground wave, specifically) or a communication network. Note that, although the content exchanging device 15 actually requires, in addition to the above, various components for realizing a database management function and a digital broadcasting sending/receiving function or a communication function, they are omitted because they are not the main features of the present invention.

The content distribution management device 17 includes a payment management processing unit 175 for managing payments of a content requested by the content distributing device A 11 and allocating a payment to a content provider (the content providing device 1), and a copyright management processing unit 173 for managing and notifying copyright-related information (such as usage rules, a key for encrypting/decrypting a content). Note that, although the content distribution management device 17 actually requires, in addition to the above, various components for realizing a database managing function and a digital broadcasting sending/receiving function or a communication function, they are omitted because they are not the main features of the present invention.

Fig. 3 is a detailed functional block diagram of the content storage processing unit 115 of the content distributing device A 11

as shown in Fig. 2. As shown in Fig. 3, the content storage processing unit 115 includes a data receiving unit 121, a memory unit 123, a usage rule deciding unit 125 and a content decrypting unit 127.

The data receiving unit 121 stores an encrypted content received from the sending/receiving unit 117 into the memory unit 123. Further, the data receiving unit 121 stores usage rules, key information and others received from the content acquisition processing unit 113 into the memory unit 123.

An encrypted content, usage rules, key information and others are stored in the memory unit 123, which is a magnetic disk with a capacity of tens to several hundreds gigabytes, for example, by the data receiving unit 121.

The usage rule deciding unit 125 refers to the usage rules stored in the memory unit 123 so as to decide whether it is possible or not to view or use the content. Further, the usage rule deciding unit 125 updates details of usage rules in accordance with a view or use of a content. Note that the usage rule deciding unit 125 makes a decision of usage rules only when the above-mentioned content distribution management device 17 devolves upon it (many number of rights are purchased, for example).

The content decrypting unit 127 decrypts an encrypted content by using key information stored in the memory unit 123, when it is possible to view or use the content, and sends it to the user interface unit 111.

Next, operations of the system 10 will be explained with reference to figures.

Fig. 4 is a diagram of a communication sequence between each device in the case of a primary circulation of a content. Processing concerning a primary circulation of a content is performed as follows. The content distributing device A 11 receives distribution of a content from the content providing device 1 via the

content exchanging device 15. Then, the content distribution management device 17 manages purchase, usage and so on of the content in the content distributing device A 11.

A primary circulation of a content performed by the system 10 will be explained below with reference to Fig. 4, Fig. 5 and Figs. 6A ~ 6C.

Here, Fig. 5 is a diagram showing a detailed example of information which is communicated between each device (the content exchanging device 15 is omitted) with the content distribution management device 17 as a center in connection with a primary circulation of a content.

Also, a management information table 400 in Fig. 6A, which is a table in use for managing copyrights and payments per content, is stored in a memory unit 179 of the content distribution management device 17. In the management information table 400, information such as a name of a content (or an ID of a content) subject to payment management, an address and a port number of a distributor device, key information in use for encryption and decryption of a content, copyright-related information including details of reproduction rights, enabling/disabling of moving control rights and number of rights, payment information, an intermediary allocation rate, a management fee, an advertising rate and others is registered.

Although something like "a content providing device" is described here for convenience as details of "an address of a distributor" in the management information table 400, a URL on the Internet such as "www.xxx.co.jp/con_server/" is actually registered (same as above hereinafter).

Note that, in addition to the above information, content-related information concerning content distribution such as a license of copy control, a content distribution time estimated based on a content size (depending upon a compression ratio) and a

network band (it is possible, in this case, to shorten a time required for distribution of a content even via a network with a same band if a smaller size of a content is selected), quality of a content (it is possible, in this case, to obtain a content which matches a user's preferences or environments, for example, good or bad quality of an image depending upon a video format such as an HDTV (High Definition TV) or an SDTV (Standard Definition TV), or a difference of reproducibility depending upon a data compression method such as a JPEG, an MPEG or the like), printing and processing may be stored in the management information table 400, and therefore, it is possible to select a content which is to be viewed and used based on the above information.

Further, Figs. 6B and 6C show how the details of the management information table 400 change in accordance with the purchase and usage of a content by the content distributing device A 11.

(1) The content providing device 1 sends a rule registration request to the content distribution management device 17 via the network 19 in order to register usage rules of a content which is distributable to a content distributing device (Step S401). At this time, the content providing device 1 sends key information, usage rules, payment information, etc. per content name, as shown in the management information table 400 in Fig. 6A, for example. This corresponds to the processing of a 401, 403 rule registration request (Step S501) in Fig. 5.

(2) The content distribution management device 17 checks details of the rule registration request received from the content providing device 1. As a result of the check, when the content distribution management device 17 decides that the rule registration request is unacceptable, it sends a rule registration response "failed" to the content providing device 1 (Step S403). When the content providing device 1 receives the rule registration

response "failed", a user tracks down the factors of the problem of being "failed" and takes the measures, and then the processing of the above (1) and the following is re-performed.

(3) On the other hand, when the content distribution management device 17 decides that the rule registration request received from the content providing device 1 is acceptable, it sends a rule registration response "completed" to the content providing device 1 (Step S403). When the content providing device 1 receives the rule registration response "completed", it performs the processing as shown in (4) below and the following. This corresponds to the processing of a 401, 403 rule registration response (Step S503) in Fig. 5.

(4) The content providing device 1 sends a list registration request to the content exchanging device 15 via the network 19 in order to register information required for search for selecting a content which is to be distributed to a user (Step S411). In this case, the information such as usage rules, payment information and others is sent per content name, as shown in the management information table 400 in Fig. 6A, for example, similarly to the above-mentioned "rule registration request".

Note that the content exchanging device 15 may be either one unit for the whole system or plural as shown in Fig. 1, (where two units of the content providing devices 15, 16 are shown). If there exist plural devices, the content providing device 1 selects any of them based on any information (such as duration of a search time). The content providing device 1 may, of course, select either only one of the content exchanging devices or plural ones.

(5) The content exchanging device 15 checks details of the list registration request received from the content providing device 1. As a result of the check, when the content exchanging device 15 decides that the list registration request is unacceptable, it sends a list registration response "failed" to the content providing device 1

(Step S413). When the content providing device 1 receives the list registration response "failed", a user tracks down the factors of the problem of being "failed" and takes the measures, and then the processing of the above (4) and the following is re-performed.

(6) When the content exchanging device 15 decides that the list registration request received from the content providing device 1 is acceptable, it sends a list registration response "completed" to the content providing device 1 (Step S413). When the content providing device 1 receives the list registration response "completed", it performs the processing as shown in (7) below and the following.

(7) The content distributing device A 11 specifies a search keyword ("content A" or the like as a content name, for example) (Step S420), and sends a list search request to the content exchanging device 15 (Step S421), in order to request a search of a content desirable to be acquired via the network 19 and a list of the search results.

(8) The content exchanging device 15 checks details of the list search request received from the content distributing device A 11. As a result of the check, when the content exchanging device 15 decides that the list search request is unacceptable, it sends a list search response "failed" to the content distributing device A 11 (Step S423). When the content distributing device A 11 receives the list search response "failed", a user tracks down the factors of the problem of being "failed" and takes the measures, and then the processing of the above (7) and the following is re-performed.

(9) If the content exchanging device 15 decides that the list search request received from the content distributing device A 11 is acceptable, it sends a list search response "completed" as well as a list of the search results to the content distributing device A 11 (Step S423). When the content distributing device A 11 receives the list and the list search response "completed", it performs the

processing as shown in (10) below and the following.

(10) The content distributing device A 11 selects a content that meets desired usage rules among the received list, (and thereby, a distributor device of this content is specified). At this time, the content distributing device A 11 sets weighting factors corresponding to the degree of closeness to the desired usage rules, and selects a content having the biggest value obtained by multiplying weighting factors of respective usage rules. In Fig. 6A, for example, assume that a user of the content distributing device A 11 makes a keyword search using a key word "content A" as a "content name", and as a result, a content A 401 and a content A 403 of the content providing device 1 are listed. In this case, if the user desires rental reproduction for 7 days (in this case, the weighting factors of a "reproduction right" as a usage rule of the content A 401 and the content A 403 are set to be 10, respectively), a movable content (in this case, the weighting factors of a "moving control right" of the content A 401 and the content A 403 are set to be 0 and 10, respectively), and a content as cheap as possible (in this case, the weighting factors of "payment information" of the content A 401 and the content A 403 are set to be 7 and 5, respectively), the content A 403 having a bigger value obtained by multiplying respective weighting factors is to be selected (the values obtained by multiplying the above-mentioned weighting factors of the content A 401 and the content A 403 are 0 and 500, respectively). Note that it may be configured so that the above processing for selecting a content be performed in the content exchanging device 15.

(11) The content distributing device A 11 sends a content distribution request to the content providing device 1 in order to receive the distribution of the content A 403 selected in the above-mentioned processing (10) (Step S431). This corresponds to the processing of a 403 content distribution request (Step S505)

in Fig. 5. The content distributing device A 11 usually requests the content providing device 1 to distribute a content to the content distributing device A 11 itself. However, a user of the content distributing device A 11 can specify another device (the content distributing device B 13, for example) than the device that made the request (that is, the content distributing device A 11) as a device to be distributed, because a device to distribute and a device to be distributed as well as a content are specified when a content distribution request is made (Step S433B). In other words, it becomes possible to make distribute a content as a gift.

(12) The content providing device 1 checks details of the content distribution request received from the content distributing device A 11. As a result of the check, when the content providing device 1 decides that the content distribution request is unacceptable, it sends a content distribution response "failed" to the content distributing device A 11 (Step S433, Step S507). When the content distributing device A 11 receives the content distribution response "failed", a user tracks down the factors of the problem of being "failed" and takes the measures, and then the above-mentioned processing of (11) and the following are re-performed.

(13) When the content providing device 1 decides that the content distribution request received from the content distribution device A 11 is acceptable, it sends a content distribution response "completed" as well as a non-purchased encrypted content to the content distributing device A 11 (Step S433). In Fig. 5, this corresponds to the processing of a 403 content distribution response (Step S507) in Fig. 5. When the content distributing device A 11 receives the content distribution response "completed", it performs the processing as shown in (14) below and the following.

Note that, in Fig. 4, the case where a content is distributed from the content providing device 1 to the content distributing

device B 13 as a gift is shown by dashed lines.

(14) The content distributing device A 11 sends a content purchase request to the content distribution management device 17 in order to purchase a content based on a user's operation accepted via the user interface unit 131 (Step S451). This corresponds to the processing of a 403 purchase request (reproduction 1 day, 7 rights, 1,400 yen) (Step S509) in Fig. 5.

Note that, in a content purchase request, it is possible to select a combination of plural usage rules or any of details of copyright-related information as each usage rule. Thereby, even if a request to use a content in a new manner arises and a content distributing device meeting this request is produced, it is possible to extend the system of the present invention flexibly by adding a new function for usage rule processing to a content distributing device as a distributor (a content providing device in the present invention). Note that when the content distributing device A 11 distributes a non-purchased content, that is, it intermediates a content, the following processing (15) ~(17) is not performed.

(15) The content distribution management device 17 checks details of the content purchase request received from the content distributing device A 11. As a result of the check, when the content distribution management device 17 decides that the content purchase request is unacceptable, it sends a content purchase response "failed" to the content distributing device A 11. When the content distributing device A 11 receives the content purchase response "failed", a user tracks down the factors of the problem of being "failed" and takes the measures, and then the above processing of (14) and the following is performed.

(16) When the content distribution management device 17 decides that the content purchase request received from the content distributing device A 11 is acceptable, it updates the details of the management information table 400 stored in the memory unit 179 of

the content distribution management device 17, and sends a content purchase response "completed" as well as copyright-related information to the content distributing device A 11 (Step S453). This corresponds to the processing of a 403 purchase response (reproduction 1 day, distributed one by one among 7 rights) (Step S511) in Fig. 5. When the content distributing device A 11 receives the purchase response "completed" and so on, it performs the processing of (17) below and the following.

More specifically, in order to clarify whom the copyrights of a part of (although a part of the content is to be purchased in an example of Fig. 6, the whole content can be purchased depending upon details of the purchase) the content A 403 is entitled to, a new column is added, and necessary information is diverted from the column of the content A 403 or newly registered. In the example of Fig. 6B, since the reproduction rights for 7 days are purchased for the content A 403, the number of rights of the content A 403 is revised from "100,000" to "99,993" and the number of rights of a new added content A 411 is described as "7". Further, the "address of distributor" of the content A 411 is revised from "content providing device" to "content distributing device A". Note that since a content is purchased in this example, "payment information" of the content A 411 is described as "not for sale", and "intermediary allocation rate", "management fee" and "advertising rate" are described " as " --- (no description)", respectively. Also, as for the key information of the content A 411 "zzz", which is different from the key information of the content A 403 "yyy", is received from the content distribution management device 17 and described.

Further, the content distribution management device 17 acquires 1 yen, for example, as a management fee for right movement from the content providing device 1 or the content distributing device A 11 to make a profit. Note that as a business of the owner of the content distribution management device 17, he/she

may, instead of or in addition to acquiring the above management fee, add an advertisement such as an e-mail to a content purchase response so as to acquire an advertising income from an advertiser. In the case of the content A 403 in the examples of Figs. 6A~6C, the owner acquires 1 yen of an advertising rate for one addition of the advertisement, regardless of the advertisement style.

When a user of the content distributing device A 11 exercises reproduction rights for 4 days of a content after he/she purchases it, the number of rights on the management information table 400 is revised from "7" to "3" by a copyright management processing unit 173 of the content distribution management device 17, as shown in a column of the content A 411 in Fig. 6C. When the reproduction rights are exercised, the content distributing device A 11 makes a license request to the content distribution management device 17 every time the reproduction right is exercised second and onward. The content distribution management device 17 decides the licensing based on the remaining number of reproduction rights and sends back the license response. The content distributing device A 11 receives the license response (including usage rules) and then the user views the content.

Note that when a user of the content distributing device A 11 purchases many (1,000, for example) number of rights, it is troublesome to make a license request to the content distribution management device 17 every time of the purchase. In such a case, it can be controlled so that the number of rights is decremented every time the usage rule deciding unit 125 reproduces the content while the purchased number of rights is stored in the memory 123 of the content distributing device A 11. In this case, the user of the content distributing device A 11 prohibits access to the number of rights stored in the memory unit 123.

Note that as to the copyright-related information, the usage rules are distributed from the content distribution management

device 17 to the content distributing device A 11 in a minimum unit (any of 1-time use or control free, 1-time use or control disabled, and 1-time use or only-1-time control, for example). However, if the content was purchased under the rule of 1-time use or control free, it is used or controlled without making a license request. As a result, the content distributing device A 11 to which the usage rules are distributed decides the minimum unit of the usage rules only and performs the processing.

(17) The content distribution management device 17 sends a distribution notice (a purchase notice) to the content providing device 1. Thereby, it is notified that the rights to use stored by the content providing device 1 were moved to another device (Step S471). This corresponds to the processing of an allocation notice (a purchase notice, 1,400 yen) (Step S513) in Fig. 5.

(18) When the content providing device 1 receives the allocation notice (purchase notice) from the content distribution management device 17, it sends an allocation confirmation (a purchase confirmation) to the content distribution management device 17 (Step S473). This corresponds to the processing of an allocation confirmation (a purchase confirmation, 1,400 yen) (Step S515) in Fig. 5.

As described above, the system for performing copyright management and payment management concerning the copyrights independently upon distribution of an encrypted content in a content distribution management device is built, and thereby it becomes possible to prevent copyright infringements caused by illegitimate file exchange or the like.

(The Second Embodiment)

In the first embodiment, the case where copyright management and payment management in a primary circulation of a content are performed by a content distribution management device

was explained. In the second embodiment, the case where copyright management and payment management in a secondary circulation of a content are performed by a content distribution management device will be explained.

Note that explanation of the configuration similar to that of the first embodiment will be omitted, and instead, the configuration peculiar to the second embodiment will be focused on.

Fig. 7 is a block diagram showing a functional configuration of each device in a content distribution management system 20 according to the second embodiment, in which how communication is performed between each device in a secondary circulation of a content is illustrated. More specifically, Fig. 7 is a diagram showing the case where the content distributing device B 13 receives an encrypted content in a secondary circulation from the content distributing device A 11 which obtained the content in a primary circulation (purchased or non-purchased). Although the functional configuration of the content distributing device B 13 is newly illustrated in Fig. 7, it is basically same as that of the content distributing device A 11 in the above first embodiment. Note that the content distributing device A 11 in Fig. 7 also has functions of the content providing device 1 in the first embodiment. Further, when a non-purchased content is purchased in a secondary circulation, the content distribution management device 17 allocates an intermediary fee to an intermediary of the content, and collects a management fee from at least one of a provider, an intermediary and a purchaser of the content. It can collect the management fee from plural ones or all of these, of course. When a content is provided by the content providing device 1, intermediated by the content distributing device A 11, and then purchased by the content providing device B 13, for example, the content distribution management device 17 allocates an intermediary fee to the content distributing device A 11, and collects

a management fee from the content providing device 1 and the content distributing device B 13.

Fig 8 is a diagram of a communication sequence in the case where a purchased content and a non-purchased content according to the second embodiment are in a secondary circulation. Here, "a purchased content" means an encrypted content that can be decrypted because payment processing was performed between a content distributing device and a content distribution management device, and "a non-purchased content" means an encrypted content that can not be decrypted because payment processing was not performed between a content distributing device and a content distribution management device.

The communication sequence of Fig. 8 is different from that of Fig. 4 in that an intermediation notice that an intermediary fee will be allocated from the content distribution management device 17 to the content distributing device A 11 is added, when the content distributing device B 13 purchased a content through the intermediation of the content distributing device A 11. Note that when the content distributing device B 13 secondarily circulates a content which was purchased by the content distributing device A 11 in a primary circulation, the communication sequence of Fig. 8 is same as that of Fig. 4 where a content is primarily circulated from the content providing device 1 to the content distributing device A 11 in the first embodiment.

Fig. 9 is a diagram showing a detailed example of information which is communicated between each device with the content distribution management device 17 as a center in the case where the content distributing device A 11 secondarily circulates a content which was purchased from the content providing device 1 further to the content distributing deice B 13. Note that in Fig. 9, communication of information in a primary circulation and a content distribution processing from the content distributing device A 11 to

the content distributing device B 13 in a secondary circulation are omitted.

Figs. 10A ~ 10D are examples showing how details of a management information table 600 managed in the content distribution management device 17 change in the case where a content is purchased in a primary circulation and further circulated secondarily.

Fig. 11 is an example of a table showing a circulation history of a content. In the table of Fig. 11, addresses of distributor devices are registered per content ID that can specify contents uniquely, for example, in order of the earliness of time the contents were purchased via the distributor devices. This table makes a history of content purchasers (devices) clearer, and it also becomes possible to allocate purchase charges more carefully based on this table.

Fig. 12 is an example showing how communication is specifically performed in the content distribution management device 17 in the case where a non-purchased content that was distributed in a primary circulation is secondarily circulated. Note that communication in the primary circulation is omitted in Fig. 12.

Figs. 13A, 13B are examples showing how details of a management information table 700 managed in the content distribution management device 17 change in the case where a non-purchased content is secondarily circulated.

Methods of copyright management and payment management in the case of a secondary circulation of a content in the content distribution management device 17 as shown in Fig. 7 will be explained below with reference to Fig. 7 ~ Fig. 13.

(19) The content distributing device A 11 purchases a content A 601 according to the procedures similar to those of the first embodiment mentioned above (similar to Step S501 ~ Step S515 in Fig. 5). Further, the content distributing device A 11 sends

a rule registration request of a content A 611 which is distributable to other content distributing devices via the network 19 to the content distribution management device 17 (Step S801). This corresponds to the processing of a 611 rule registration request (Step S613) in Fig. 9. This corresponds to the case where a user of the content distributing device A 11 offers a content A with the remaining number of rights of 3 for sale, or secondhand sale of a content, as shown in Fig. 10C.

(20) The content distribution management device 17 checks details of the rule registration request received from the content distributing device A 11, and sends a rule registration response "failed" to the content distributing device A 11 when the request is unacceptable (Step S803), in the same way as the above processing (2). The content distributing device A 11 re-performs the processing of (19) above and the following after the factors of the problem of being "failed" are tracked down and the measures are taken, in the same way as the above processing (2).

(21) The content distribution management device 17 receives the rule registration request from the content distributing device A 11 (Step S801), and when it decides that the rule registration request is acceptable, it sends a rule registration response "completed" to the content distributing device A 11 (Step S803). The content distributing device A 11 receives the rule registration response "completed", and then performs the processing of (22) below and the following. This corresponds to the processing of a 611 rule registration response (Step S615) in Fig. 9. As a result, the content distribution management device 17 revises description in the "payment information" column of the content A 611 in the management information table 600 from "not for sale" to "180 yen/right", as shown in Fig. 10C, in order to indicate that the content can be purchased under the rule of 180 yen per right for 1 day.

(22) The content distributing device A 11 sends a registration request of a list of contents which are distributable to other content distributing devices via the network 19 to the content exchanging device 15 (Step S811).

(23) The content exchanging device 15 checks details of the list registration request received from the content distributing device A 11, and sends a list registration response "failed" to the content distributing device A 11 when the request is unacceptable (Step S813), in the same way as the above processing (5). The content distributing device A 11 re-performs the processing of (22) above and the following after the factors of the problem of being "failed" are tracked down and the measures are taken, in the same way as the above processing (5).

(24) The content exchanging device 15 receives the list registration request from the content distributing device A 11, and sends a list registration response "completed" to the content distributing device A 11 when this request is acceptable (Step S813), in the same way as the processing (6) above. The content distributing device A 11 receives the list registration response "completed", and then performs the processing of (25) below and the following.

(25) The content distributing device B 13 specifies a search keyword (Step S820), and sends a search request of a list of contents which a user desires to acquire via the network 19 to the content exchanging device 15 (Step S821), in the same way as the processing (7) above.

(26) The content exchanging device 15 checks details of the list search request received from the content distributing device B 13, and sends a list search response "failed" to the content distributing device B 13 when the request is unacceptable (Step S823), in the same way as the above processing (8). The content distributing device B 13 re-performs the processing of (25) above

and the following after the factors of the problem of being "failed" are tracked down and the measures are taken, in the same way as the above processing (8).

(27) The content exchanging device 15 receives the list search request from the content distributing device B 13, and sends a list search response "completed" as well as the list to the content distributing device B 13 when this request is acceptable (Step S823), in the same way as the processing (9) above. The content distributing device B 13 receives the list search response "completed", and then performs the processing of (28) below and the following.

(28) The content distributing device B 13 selects a content that meets desired usage rules among the received list (Step S825).

(29) The content distributing device B 13 sends a content distribution request to the content distributing device A 11 (Step S831). This corresponds to the processing of a 703 content distribution request (Step S709) in Fig. 12.

(30) The content distributing device A 11 checks details of the content distribution request received from the content distributing device B 13, and sends a content distribution response "failed" to the content distributing device B 13 when the request is unacceptable (Step S833), in the same way as the above processing (12). The content distributing device B 13 re-performs the processing of (29) above and the following after the factors of the problem of being "failed" are tracked down and the measures are taken, in the same way as the above processing (12).

(31) The content distributing device A 11 receives the content distribution request from the content distributing device B 13, and sends a content distribution response "completed" as well as the non-purchased content or the purchased content to the content distributing device B 13 when this request is acceptable (Step S833), in the same way as the processing (13) above. The content

distributing device B 13 receives the content distribution response "completed", and then performs the processing of (32) below and the following. This corresponds to the processing of a 703 content distribution (Step S711) in Fig. 12.

(32) By an operation of a user of the content distributing device B 13, a content purchase request is sent via the network 19 from the user interface unit 131 of the content distributing device B 13 to the content distribution management device 17 in order to purchase a content (Step S851). This corresponds to the processing of a 611 purchase request (reproduction 1 day, 1 right, 180 yen) (Step S617) in Fig. 9, and the processing of a 703 purchase request (reproduction 1 day, 1 right, 200 yen) (Step S713) in Fig. 12, respectively.

(33) The content distribution management device 17 checks details of the request received from the content distributing device B 13, and sends a content purchase response "failed" to the content distributing device B 13 when the request is unacceptable (Step S853), in the same way as the above processing (15). The content distributing device B 13 re-performs the processing of (32) above and the following after the factors of the problem of being "failed" are tracked down and the measures are taken, in the same way as the above processing (15).

(34) The content distribution management device 17 receives the purchase request from the content distributing device B 13, and sends a purchase response "completed" as well as the copyright-related information to the content distributing device B 13 when this request is acceptable (Step S853), in the same way as the processing (16) above. The content distributing device B 13 receives the purchase response "completed", and then performs the processing of (35) below and the following. This corresponds to the processing of a 611 purchase response (reproduction 1 day, distribution 1 right) (Step S619) in Fig. 9, and the processing of a

703 purchase response (reproduction 1 day, distribution 1 right) (Step S715) in Fig. 12, respectively.

The copyright management processing unit 173 of the content distribution management device 17 revises the number of rights of the content A 611 in the management information table 600 from "3" to "2", as shown in Figs. 10C and 10D.

On the other hand, in the case of a non-purchased content, the number of rights of the content A 703 in the management information table 700 from "100,000" to "99,999", as shown in Fig. 13. Also, a column for a content A 711 is added to the management information table 700, and "1" is described for the number of rights. In this case, the content distribution management device 17 acquires a management fee for right movement (1 yen, for example) as a profit from the content providing device 1, the content distributing device A 11 or the content distributing device B 13.

(35) The content distribution management device 17 sends an allocation notice (an intermediation notice in the case of intermediating the non-purchased content, and a purchase notice in the case of intermediating the purchased content) to the content distributing device A 11 (Step S871). This corresponds to the processing of an allocation notice (purchase notice, 180 yen) (Step S 621) in Fig. 9, and the processing of an allocation notice (intermediation notice, 1 yen) (Step S721) in Fig. 12, respectively.

(36) The content distributing device A 11 receives the allocation notice (the intermediation notice in the case of intermediating the non-purchased content, and the purchase notice in the case of intermediating the purchased content) from the content distribution management device 17, and then sends an allocation confirmation (an intermediation confirmation in the case of intermediating the non-purchased content, and a purchase confirmation in the case of intermediating the purchased content) to the content distribution management device 17 (Step S873). This

corresponds to the processing of an allocation confirmation (purchase confirmation 180 yen) (Step S623) in Fig. 9, and the processing of an allocation confirmation (intermediation confirmation 1 yen) (Step S723) in Fig. 12, respectively.

(37) When the non-purchased content was intermediated, the content distribution management device 17 sends an allocation notice (a purchase notice) to the content providing device 1 which provided the content (Step S891). This corresponds to the processing of an allocation notice (purchase notice, 199 yen) (Step S717) in Fig. 12. In this case, as shown in Fig. 12, the amount of charge allocated to the content providing device 1 is reduced according to an intermediary allocation rate (1 yen/right [0.5%]).

(38) The content providing device 1 receives the allocation notice (purchase notice) from the content distribution management device 17, and then sends an allocation confirmation (a purchase confirmation) to the content distribution management device 17 (Step S893). This corresponds to the processing of the allocation confirmation (purchase confirmation, 199 yen) (Step S723) in Fig. 12.

Fig. 14 shows lists of data regarding intermediaries registered corresponding to IDs of devices such as the above content providing device and the content distributing devices. Note that these device Ids are defined uniquely by the above addresses. These lists are registered in the memory unit 179 of the content distribution management device 17. These lists 130, 140, 150 are used for preventing a content from being purchased by a dishonest intermediary.

As for the content providing device 1 whose device ID is "s0001", for example, information such as an "intermediary ID" and an "intermediary name" of an intermediary authorized by the content providing device 1 is registered.

Fig. 15 is a flowchart showing a flow of payment allocation

processing among payment processing in the content distribution management device 17.

First, when the content distribution management device 17 receives a purchase request (Step S1401), it checks whether the content purchase request includes an intermediary ID or not (Step S1402). When the intermediary ID is included, the content distribution management device 17 judges that a non-purchased content was intermediated. When the intermediary ID of the content is identical with the intermediary ID registered in the memory unit 179, the content distribution management device 17 allocates an intermediary fee to the intermediary, as well as allocates a purchase charge to the distributor of the content (Steps S1406, 1403, 1404).

On the other hand, when the intermediary ID is not included, the content distribution management device 17 judges that a purchased content was further purchased, and allocates the purchase charge to the distributor of the content (Steps S1403, 1404).

As described above, it becomes possible to prevent copyright infringements caused by an illegitimate file exchange or the like by building the system for managing distribution of an encrypted content separately from copyright management and payment management, regardless of a purchased or a non-purchased content, even when the content is secondarily circulated.

Note that although the content exchanging device 15 is different from the content distribution management device 17 in the above embodiments, the configuration in which both the content exchanging device 15 and the content distribution management device 17 are realized in the same device is also included in the present invention. Further, the configuration in which the content distributing devices A 11 and B 13, the content exchanging device 15 and the content distribution management device 17 are realized

in the same device is also included in the present invention.

On the other hand, since the content providing device 1 is not specifically distinguished from the content distributing devices A 11 and B 13 from a functional viewpoint, it can be considered to be a kind of a content distributing device. Therefore, it is obvious that each user of each content distributing device may be a content provider.